Renal Cell Carcinoma Metastatic to The Ovary: A Case Report

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Identification of extraovarian sites with primary tumors similar to ovarian tumors like that renal clear cell adenocarcinoma is difficult. Ovarian metastasis from renal clear cell adenocarcinoma is quite rare and such entity presented in this article. Primary site was right kidney and tumor spread to bilateral ovaries. Immunohistochemical study was necessitated for diagnosis of primary site. Patient died on the 58th day after the operation due to pulmonary emboli. Ovarian metastasis in pelvic masses must be kept in mind. Identification of primary focus is important regard with planning of treatment and determining the prognosis. The presented case is distinctive with the primary focus being in the right kidney, the ovary metastasis being bilateral and development of pulmonary emboli. Special care must be attributed regarding the risk of pulmonary emboli, especially in patients diagnosed as renal clear cell.

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Key Words: Renal clear cell adenocarcinoma, Metastasis, Ovary

Introduction

Approximately 20% of adnexial masses operated were malignant, of which 7% to 12.5% found to have an extragenital primary focus.[1-3] Specifying the primary focus in metastatic tumors is important in relation to follow–up and treatment of the patient. However, extraovarian site are difficult to identify and often requires immunohistochemical studies.

A renal clear cell carcinoma metastasizing to the ovary is presented in this article.

Case Report

A 49 years old woman was referred because of pelvic mass and ascites. Pelvic examination revealed a firm, semi mobile mass filling the pelvis up to the umbilicus. The biochemical examination revealed thrombocytosis in complete blood count (642.000/ml) and elevated levels of CA 125 and CA 15-3 (respectively 167 IU/ml, 96 IU/ml). Magnetic resonance imaging of the abdomen demonstrated disseminated ascites and a tumoral mass infiltrating the left iliac bone and iliacus muscle and the right kidney. Moreover, this mass was found to infiltrate the fat tissue on the left side of posterior lip of cervix.

No tumoral infiltration was found out in the lung parenchyma in thorax CT. However, a hypo dense area of 70 x30x25 mm in the right 5th costal space, pleural effusion at right side, tumoral thickening on the right parietal pleural surface and two masses 12 mm and 10 mm in dimension beneath the skin at the right side of sternum were found. In addition, several enlarged lymph nodes, the largest of which was 15 mm, were detected in the right axial area. Mammography examination was normal.

Laparotomy revealed a multi-lobular 150x150x130 mm and 150x150x100 mm mass with solid and cystic areas derived of both ovaries. Moreover, another 110x50x30 mm mass of similar nature was present in the retroperitoneal area, beginning from the right common iliac artery bifurcation level, covering ureter and invading the right kidney completely. In addition, two tumoral areas with diameters of 40x40x 20mm and 30x20x20mm involving the ileum were seen. 6300 cc of ascites fluid was drained in the operation.

The intraperitoneal tumor engulfing both ovaries was resected. Frozen examination was reported to be consistent with malignant epithelial tumor. Upon this, type 1 hysterectomy + right nephrectomy (rescinded until pelvic entrance of ureter) + paraaortic and bilateral pelvic lymphadenectomy + total omentectomy + ileum rescind and side-to side anastomosis was done to ensure maximum debulking.

Pathological examination revealed tumoral infiltration in right kidney, ovaries, right ureter, cervical stroma, endometrium and ileum. However, the primary focus couldn't be discriminated accurately. Immunohistochemical study utilized upon this established that the material was painted by Renal Cell Carcinoma (RCC), cytokeratin (CK)-7, CK-20 and CD-10. It couldn't be painted with vimentine and didn't comprise any estrogen receptor. The primary focus was acknowledged to be the kidney.

At macroscopic level the intraperitoneal (ovarian) mass appeared to be as a lobular, 0.5 cm in diameter and 4 cm in size mass with a regular outer surface in solid and cystic con-

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sistence with one exophytic protrusion. Macroscopic structure of renal tumor was consistent with uniform surface, solid and cystic nature, yellow-white color mass. Microscopically, appearance of both masses was the same whereas these comprised cells of big clear cytoplasm and small nucleus, granular cytoplasm and vascular nucleus (Figure 1-2). Moreover, while tumor cells formed tubular pattern in some areas, there were pleomorphic tumor cells of large hyper chromatic nucleus present in some other areas.

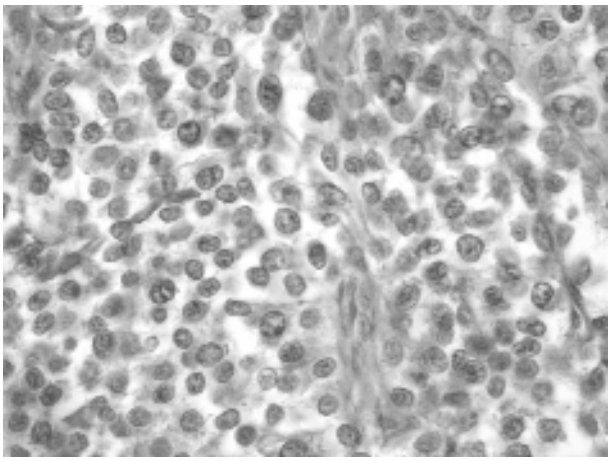

Figure 1: Renal clear cell tumor

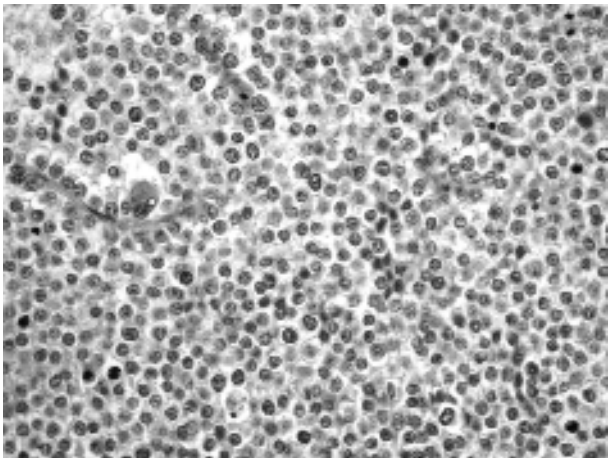

Figure 2: Ovarian metastasis from renal clear cell carcinoma

Low molecular weight heparin was introduced in a prophylactic dose until postoperative 5th day. The patient was reoperated on 23rd day because of ileus and bridectomy was done. Prophylactic anticoagulant treatment was started after the second operation, too. However, one day later, pulmonary embolus was developed. Prophylactic anticoagulant dose was adjusted to the treatment dose upon this. Deep vein thrombosis was not determined in the extremity examination made. As the response of the patient to the treatment was satisfactory, anticoagulant dose was decreased to prophylaxis dose. Meanwhile, oral anticoagulant treatment was started and maintained. However, the patient died on the 58th day after the first operation due to recurrence of pulmonary emboli.

Discussion

Although the power of producing metastasis is great, renal cell adenocarcinoma is a tumor ensuring a long life rate after the treatment.[4] A distant metastasis is present in 25-33% during the initial diagnosis.[5] Metastasis may develop in unusual sites many years after the treatment of primary focus. Lungs, bones, lymph nodes, liver, brain, skin and adrenal glands are commonly involved.[6]

Metastasis to ovary is very rare. 12 cases have been reported until today in the English literature. Ovarian metastasis was not found out in any of 1451 renal adenocarcinoma cases in an autopsy study.[7] In another autopsy study the reported rate is 0.5%.[8] The low rate of ovarian metastasis is accounted for finding renal cell adenocarcinoma most often in males and in patients at older ages.[9] Though disputed, it has been found in studies that the rate of ovarian metastasis from extragenital organs was higher in younger people. Decreased ovarian blood flow in aged individuals, especially in postmenopausal women was suggested to lessen the probability of dissemination through hematogenic or lymphogenic routes.[9,10]

50-66% of metastatic ovarian tumors are bilateral.[1,3,11] However, out of 12 cases with a primary renal cell carcinoma foci, 4 (33.3%) are bilateral.[9] Metastasis is in left ovary in 5 cases out of 8 unilateral cases. In 8 of these metastatic cases the primary carcinoma foci were in the left kidney.[9] Direct flow of left vena ovarica to vena renalis sinistra explains why the metastasis occurs in left ovary and primary focus of metastasis is in left kidney mostly.

A histological difference from that one which causes metastasis due to primary ovarian clear cell carcinoma does exist. While glandular and tubular pattern in primary tumor of ovary is seen in the rate of 87%, such a histological structure is present in the metastatic one only in focal form.[12] Although presence of Hobnail cells and intraluminal mucine production are characteristic features for the primary one, sinusoidal vascular framework is typical in the metastatic one.[9,10,13] While mixture of histologic patterns (solid, papillary and tubulocystic or glandular) and hyaline basement membrane-like material are seen in the primary one in the rates of 83% and 91% respectively, such histological features are not observed in the metastatic one.[12]

Immunohistochemical staining may be required for discriminating the primary one from the metastatic one. In primary ovarian clear cell carcinoma, positivism of CK-7 and negativism of CD10 and RCC are characteristic features. The metastatic one is painted typically by CD10 and RCC.[14] However, in metastatic tumor, CK-7 and vimentine also may be positive.[14]

In renal cell carcinoma, in 5.6% of patients the tumor dis-

seminates until vena cava inferior (VCI).[15] There is the risk of sudden death as a result of pulmonary emboli that may develop in such a case. Mortality and morbidity rates reported due to this change respectively between 0-9.1% and 0-27.3%.[16]

In the patient presented, no visible tumor is left behind in the operation. Nevertheless, ileus and pulmonary emboli couldn't be prevented in spite of parenteral nutrition and anticoagulant support during postoperative period. The pulmonary embolus developed was accepted as a complication of the renal cell carcinoma. Chemotherapy couldn't be started since the general state of the patient couldn't become better.

Ovarian metastasis in pelvic masses must be kept in mind. Identification of primary focus is important regard with planning of treatment and determining the prognosis. The primary focus can be identified by proper approaches prior to operation, during the operation or after the operation. The presented case is distinctive with the primary focus being in the right kidney, the ovary metastasis being bilateral and development of pulmonary emboli. Pulmonary emboli may develop during intraoperative or postoperative periods. Special care must be attributed regarding the risk of pulmonary emboli, especially in patients diagnosed as renal clear cell.

Overe Metastaz Yapan Renal Hücreli Karsinoma: Olgu Sunumu

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Primer tümörün over tümörlerine benzediği renal berrak hücreli adenokarsinoma gibi ekstraovaryan tümörlerin tanımlanması zordur. Renal berrak hücreli adenokarsinomun overe metastazı nadir görülen bir durumdur ve bu vaka takdiminde böyle bir olgu sunulmuştur. Tümörün primer yerleşim yeri sağ böbrekti ve tumor her iki overe yayılmıştı. Tümörün primerinin tanımlanması için immünhistokimyasal çalışma gerekti. Hasta pulmoner emboli nedeniyle postoperatif 58. günde kaybedildi. Pelvik kitlelerde ovaryan metastaz olasılığı akılda tutulmalıdır. Primer tümörün tanımlanması prognozun belirlenmesi ve tedavinin planlanması açısından önemlidir. Sunulan vakada primer tümör bölgesinin sağ böbrek olması, bilateral over metastazı mevcudiyeti ve pulmoner emboli gelişimi ayırt edici özelliklerdir. Renal berrak hücreli kanser tanısı alan hastalarda pulmoner emboli riski dikkate alınmalıdır.

Anahtar Kelimeler: Renal berrak hücreli adenokarsinoma, Metastaz, Over

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